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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,735	09/23/2003	Ronald D. Provow	58727US002	1778
32692	7590	08/12/2004	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427			MARCHESCHI, MICHAEL A	
			ART UNIT	PAPER NUMBER
			1755	

DATE MAILED: 08/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/668,735	PROVOW ET AL.	
	Examiner	Art Unit	
	Michael A Marcheschi	1755	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 6-9 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-17 and 26-38 is/are allowed.
- 6) ☒ Claim(s) 1-5 and 18-25 is/are rejected.
- 7) ☒ Claim(s) 25 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)          |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. <u>7/13/04</u> .                                     |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>5/10/04</u>   | 6) <input type="checkbox"/> Other: ____.                                    |

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-5 and 10-38, drawn to an abrasive article and use thereof, classified in class 51, subclass 307.
- II. Claims 6-9, drawn to a method of making an abrasive article, classified in class 51, subclass 293.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product as claimed can be made by another and materially different process, such as one that does **not** involve "placing abrasive particles in the tool". The abrasive particles can be adhered to the top of the features of the abrasive articles by sprinkling said particles thereon.

Because these inventions are distinct for the reasons given above and (1) have acquired a separate status in the art as shown by their different classification, AND (2) have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

During a telephone conversation with Rick L. Franzen on 7/8/04 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-5 and 10-38. Affirmation of this election must be made by applicant in replying to this Office action. Claims 6-9 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

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Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "120" and "122" have both been used to designate the abrasive composites (see pages 3 and 12).

The drawings are also objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "100" and "120" have both been used to designate the abrasive article (see pages 3, 12 and top of page 17).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

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The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character “120” has been used to designate both “abrasive composite” (page 3) and “abrasive article” (top of page 17).

The drawings are also objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character “122” has been used to designate both “abrasive composite” (page 12) and the “base” (page 20).

The drawings are also objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character “120” has been used to designate both “abrasive composite” (page 3) and the “features” (page 20).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Reference numbers 121, 126, 129 and 141 as set forth in figures 1, 1A and 1B are not set forth in the specification.

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Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because both figures 1 and 2 contain reference numeral 121 and it is apparent that the parts are not the same.

The drawings are also objected to as failing to comply with 37 CFR 1.84(p)(5) because both figures 1 and 2 contain reference numeral 120 and it is apparent that the parts are not the same.

The drawings are also objected to as failing to comply with 37 CFR 1.84(p)(5) because figure 1 contains reference numeral 128 (two occurrences) it is apparent that the parts are not the same. The first "128" is referring to the top planar portion and the second "128" appears to be referring to the side wall.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any

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amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claims 2, 3, 5 and 25 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2, 3 and 5 are indefinite because the phrase "said abrasive features" lacks antecedent basis since "abrasive features" have not been **literally** defined before.

Claim 25 is indefinite because claims 6-9, which this claim can depend on, are not abrasive article claims.

Claim 25 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to the other claims in the alternative only. This should be changed "**A tool for making the abrasive articles according to any one of claims 1-17.**".

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 18, 19, 20 and 25 are rejected under 35 U.S.C. 102 (b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hoopman (097).

Hoopman teaches in the abstract, column 5, lines 10-15 and column 9, lines 38-column 17, line 68, an abrasive article comprising a backing and a plurality of abrasive/binder features thereon, wherein the features can be any convenient shape (4 surfaces), such as a truncated pyramid.

The claimed invention is anticipated by the reference because the reference teaches abrasive/binder features on a backing and it is the examiners position that since applicants do not define what is meant by "positive rake angle", the features of the reference meet this requirement absent evidence to the contrary. In the alternative, no patentable distinction is seen to exist between the reference and the claimed invention absent evidence to the contrary.

Claims 2-5, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoopman (097).

The limitation of claim 2 is obvious because the reference states that the features can be any convenient shape and this broadly reads on features having an angled top portion. In



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addition, the reference states that the feature can be a truncated pyramid and the broad interpretation of “truncated” encompasses an angled top, as long as said top is flat.

The limitation of claim 3 is obvious because it is the examiners position that this limitation would have been obvious to the skilled artisan in order to assist in removing material from the workpiece.

The limitation of claim 4 is obvious because the reference states that the features can be any convenient shape and this broadly reads on a shape having the limitations according to this claim.

The limitation of claim 5 is obvious because the reference states that the features can be any convenient shape and this broadly reads on features having an angled top portion. In addition, the reference states that the feature can be a truncated pyramid and the broad interpretation of “truncated” encompasses an angled top, as long as said top is flat.

The limitation of claim 21 is obvious because the reference states that the features can be any convenient shape and this broadly reads on features having an angled top portion. In addition, the reference states that the feature can be a truncated pyramid and the broad interpretation of “truncated” encompasses an angled top, as long as said top is flat.

The limitation of claim 22 is obvious because it is the examiners position that this limitation would have been obvious to the skilled artisan in order to assist in removing material from the workpiece.

Claims 1, 2, 18, 19, 21 and 25 are rejected under 35 U.S.C. 102 (b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Pieper et al. (223).

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Pieper et al. teach in the abstract, column 2, lines 1-68, column 9, lines 22-25 and figure 9, an abrasive article comprising a backing and a plurality of abrasive/binder features thereon, wherein the features can be pyramidal (4 sides) or saw toothed (4 sides with an angled top portion).

The claimed invention is anticipated by the reference because the reference teaches abrasive/binder features on a backing and it is the examiners position that since applicants do not define what is meant by “positive rake angle”, the features of the reference meet this requirement absent evidence to the contrary. In the alternative, no patentable distinction is seen to exist between the reference and the claimed invention absent evidence to the contrary.

Claims 3, 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pieper et al. (223).

The limitation of claims 3 and 22 is obvious because it is the examiners position that this limitation would have been obvious to the skilled artisan in order to assist in removing material from the workpiece.

The limitation of claim 20 is obvious because it is the examiners position that a “saw tooth” pattern broadly reads on a top section being “**substantially**” parallel to the base. Although the reference top portion is angled, applicants have not defined what is meant by “substantially parallel” and thus the term “substantially” reads on an angled top portion absent evidence to the contrary.

Claims 1, 18, 19, 20, 23 and 25 are rejected under 35 U.S.C. 102 (b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hoopman et al. (217).

Hoopman et al. teach in the abstract, column 16, line 43-column 18, line 45 and the figures, an abrasive article comprising a backing and a plurality of abrasive/binder features thereon, wherein the features can be any convenient shape (4 surfaces), such as a truncated pyramid or a feature meeting the limitations of instant claims 23-24 (see the figures, especially figures 2-3).

The claimed invention is anticipated by the reference because the reference teaches abrasive/binder features on a backing and it is the examiners position that since applicants do not define what is meant by “positive rake angle”, the features of the reference meet this requirement absent evidence to the contrary. In the alternative, no patentable distinction is seen to exist between the reference and the claimed invention absent evidence to the contrary.

Claims 2-5, 21, 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoopman et al. (217).

The limitation of claim 2 is obvious because the reference states that the features can be any convenient shape and this broadly reads on features having an angled top portion. In addition, the reference states that the feature can be a truncated pyramid and the broad interpretation of “truncated” encompasses an angled top, as long as said top is flat.

The limitation of claim 3 is obvious because it is the examiners position that this limitation would have been obvious to the skilled artisan in order to assist in removing material from the workpiece.

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The limitation of claim 4 is obvious because the reference states that the features can be any convenient shape and this broadly reads on a shape having the limitations according to this claim.

The limitation of claim 5 is obvious because the reference states that the features can be any convenient shape and this broadly reads on features having an angled top portion. In addition, the reference states that the feature can be a truncated pyramid and the broad interpretation of “truncated” encompasses an angled top, as long as said top is flat.

The limitation of claim 21 is obvious because the reference states that the features can be any convenient shape and this broadly reads on features having an angled top portion. In addition, the reference states that the feature can be a truncated pyramid and the broad interpretation of “truncated” encompasses an angled top, as long as said top is flat.

The limitation of claim 22 is obvious because it is the examiners position that this limitation would have been obvious to the skilled artisan in order to assist in removing material from the workpiece.

Claims 18-21 are rejected under 35 U.S.C. 102 (b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Bruxvoort (980 A1).

Bruxvoort teaches in the abstract and sections [0043]-[0044], a feature for an abrasive article comprising a base and a body, such as the ones disclosed in section [0043] of the reference (4 sidewalls).

The claimed invention is anticipated by the reference because the reference teaches abrasive/binder features on a backing and it is the examiners position that since applicants do not

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define what is meant by "positive rake angle", the features of the reference meet this requirement absent evidence to the contrary. In addition, the sides of the features are said to form an undercut portion. In the alternative, no patentable distinction is seen to exist between the reference and the claimed invention absent evidence to the contrary.

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bruxvoort (980 A1).

The limitation of claim 23 is obvious because the reference teaches shapes for the features and it is the examiners position that these can broadly encompass the claimed shape.

Claims 10-17 and 26-38 are allowable over the prior art of record because said art fails to teach or suggest abrasive composites or features (abrasive plus binder), wherein the features include an undercut portion.

In view of the teachings as set forth above, it is the examiners position that the references reasonably teach or suggest the limitations of the rejected claims.

**"A reference is good not only for what it teaches but also for what one of ordinary skill might reasonably infer from the teachings. *In re Opprecht* 12 USPQ 2d 1235, 1236 (CAFC 1989); *In re Bode* USPQ 12; *In re Lamberti* 192 USPQ 278; *In re Bozek* 163 USPQ 545, 549 (CCPA 1969); *In re Van Mater* 144 USPQ 421; *In re Jacoby* 135 USPQ 317; *In re LeGrice* 133 USPQ 365; *In re Preda* 159 USPQ 342 (CCPA 1968)". In addition, "A**

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reference can be used for all it realistically teaches and is not limited to the disclosure in its preferred embodiments" See *In re Van Marter*, 144 USPQ 421.

"A generic disclosure renders a claimed species prima facie obvious. *Ex parte George* 21 USPQ 2d 1057, 1060 (BPAI 1991); *In re Woodruff* 16 USPQ 2d 1934; *Merk & Co. v. Biocraft Lab. Inc.* 10 USPQ 2d 1843 (Fed. Cir. 1983); *In re Susi* 169 USPQ 423 (CCPA 1971)".

Evidence of unexpected results must be clear and convincing. *In re Lohr* 137 USPQ 548. Evidence of unexpected results must be commensurate in scope with the subject matter claimed. *In re Linder* 173 USPQ 356.

The additional references cited on the 1449 have been reviewed by the examiner and are considered to be art of interest since they are cumulative to or less than the art relied upon in the above rejections.


Any foreign language documents submitted by applicant has been considered to the extent of the short explanation of significance, English abstract or English equivalent, if appropriate.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A Marcheschi whose telephone number is (571) 272-1374. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark L Bell can be reached on (571) 272-1362. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MM  
7/04

  
MICHAEL MARCHESCHI  
PRIMARY EXAMINER